

2024 Market Projects Cost, NYISO Score, Project Constraints & Stakeholder Survey

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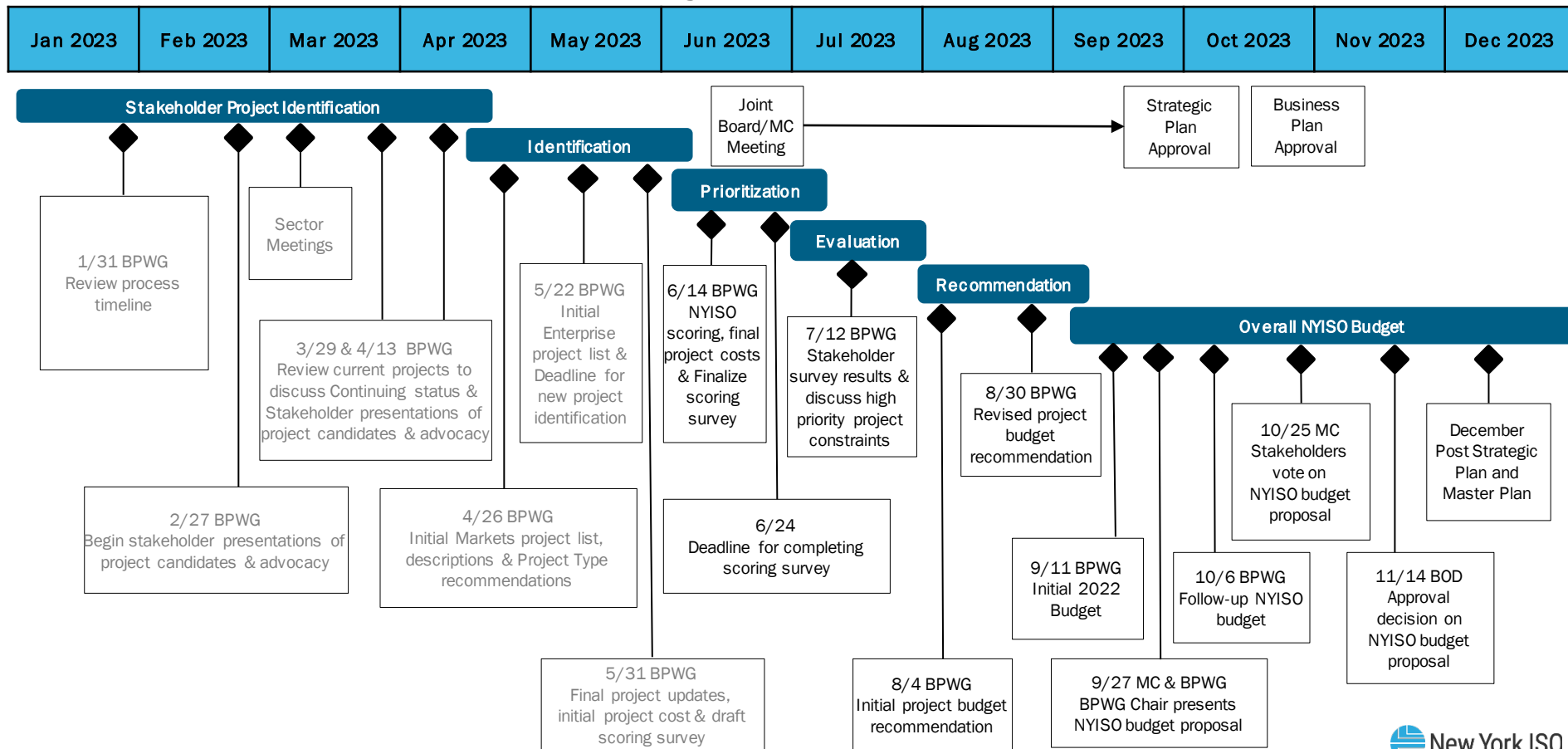
June 14, 2023, KCC

Agenda

- **Project Prioritization Timeline**
- **Stakeholder Survey**
- **Project Descriptions**
- **2024 Market Project Candidates**
- **NYISO Scores & High Priority Project Constraints**
- **Next Steps**

Project Prioritization Timeline

2024 Proposed Project Prioritization Timeline



Stakeholder Survey

Stakeholder Scoring

- Registered shared governance organizations, including non-voting participants and affiliates, will have an opportunity to score proposed Market projects in a stakeholder survey
 - Only Market projects of type Prioritize are included in survey
 - Proposed Enterprise projects are not included in the stakeholder survey
- Each organization may provide one survey response with 100 points available to assign to projects based on their priorities
- There is a comment section after each project as well as at the end of survey to supplement scoring information
- All survey results are public, including identifying organization that provided the scoring and any comments

Stakeholder Scoring Survey

- **A draft of the survey and contacts to receive survey are included with today's BPWG materials for review**
 - Designated alternative contacts to receive the survey link are shown in red
 - Contact Kevin Pytel or Member Relations for any survey related issues including any changes to contact survey is being sent to
- **Each organization will be provided a unique link to access their survey that will be included in email sent to the MC representative**
- **MC representative can provide others the ability to access survey by sharing the link**
- **Anyone with survey link can submit the survey**
- **Once submitted, the link will no longer provide access the survey**
 - The survey link can be reset if there is a need to revise after submission

Stakeholder Scoring Survey Timeline

- All project cost information is posted with the BPWG materials
- Official survey will be distributed after BPWG
 - If last minute updates to survey are made today, this may delay the survey distribution
- Deadline for completing stakeholder survey is June 24th
- Survey results and high-priority project constraints to be reviewed and discussed at the July 12th BPWG

Project Descriptions

Project Descriptions

- **The NYISO has developed project descriptions for 51 proposed Market projects**
 - 1 Business & Finance, 13 Capacity Market, 11 New Resource, 22 Energy Markets, 2 Planning & 2 TCC Market
 - 7 Mandatory, 4 Continuing, 30 Prioritize & 10 Future
- **Last year, there were 43 prioritized Market projects included in the stakeholder survey**
- **Project descriptions are included with today's posted meeting materials**

2024 Market Project Candidates

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
1	5 Minute Transaction Scheduling	Energy Market	Prioritize	Market Design Concept Proposed		0.18	0.00	0.00	0.18
2	Advanced Storage Modeling and Operation	New Resource	Prioritize	Market Design Concept Proposed		0.36	0.00	0.40	0.76
3	Advancing NYISO Transparency - Requested by DC Energy	Energy Market	Prioritize	Deployment		0.23	0.00	0.42	0.65
4	Clean Hydrogen - Requested by NextEra and Constellation	New Resource	Prioritize	Market Design Concept Proposed		0.20	0.00	0.05	0.25
5	Co-located Steam and Storage – Requested by Elevate Renewable Energy	New Resource	Prioritize	Development Complete		0.11	0.00	0.00	0.11
6	Coordinated Grid Planning Process (CGPP) Continuation	Planning	Prioritize	Study Defined		0.07	0.00	0.30	0.37
7	Dynamic Reserves - Phase 1	Energy Market	Prioritize	Functional Requirements	Market Design Complete	0.31	0.00	0.70	1.01

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
8	Eliminate Offline GT Pricing	Energy Market	Prioritize	Deployment		0.23	0.00	0.00	0.23
9	Engaging the Demand Side	New Resource	Prioritize	Market Design Concept Proposed	Issue Discovery	0.19	0.00	0.30	0.49
10	Evolving Resource Adequacy Model	Capacity Market	Prioritize	Study Complete		0.24	0.00	0.50	0.74
11	Expanding Peak Hour Definition - Requested by DPS	Capacity Market	Prioritize	Market Design Complete		0.13	0.00	0.00	0.13
12	Granular Capacity Market Pricing	Capacity Market	Prioritize	Issue Discovery		0.22	0.00	0.40	0.62
13	Improve Duct-Firing Modeling	Energy Market	Prioritize	Functional Requirements		0.20	0.00	0.60	0.80
14	Internal Controllable Lines	New Resource	Prioritize	Functional Requirements	Market Design Complete	0.39	0.00	0.20	0.59

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
15	LCR Optimizer Enhancements	Capacity Market	Prioritize	Deployment	Market Design Complete	0.13	0.00	0.10	0.23
16	Long Island Reserve Constraint Pricing	Energy Market	Prioritize	Market Design Concept Proposed		0.11	0.00	0.10	0.21
17	Market Purchase Hub Transactions - Requested by LIPA	Energy Market	Prioritize	Market Design Concept Proposed		0.08	0.00	0.20	0.28
18	MDIWG Support	New Resource	Prioritize	Issue Discovery		0.04	0.00	0.00	0.04
19	Mitigation Threshold Review	Energy Market	Prioritize	Market Design Concept Proposed		0.03	0.00	0.00	0.03
20	Operating Reserves Performance	Energy Market	Prioritize	Market Design Complete		0.17	0.00	0.10	0.27
21	Participation Opportunities for Small DER	New Resource	Prioritize	Market Design Concept Proposed		0.12	0.00	0.25	0.37

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
22	Pivotal Supplier Calculation Change	Capacity Market	Prioritize	Market Design Concept Proposed		0.06	0.00	0.00	0.06
23	Reference Level Software Cleanup	Energy Market	Prioritize	Deployment		0.27	0.00	0.05	0.32
24	Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	TCC	Prioritize	Software Design		0.22	0.00	0.00	0.22
25	Storage as Transmission	New Resource	Prioritize	Market Design Concept Proposed	Issue Discovery	0.17	0.00	0.00	0.17
26	SubAccounts for Reporting - Requested by NRG	Business & Finance	Prioritize	Market Design Complete		0.06	0.00	0.00	0.06
27	Project Removed (Do Not Score)– Removal decided during 6/14 BPWG due to scope already being included in ICL Supply-Side Mitigation for Controllable Lines	Capacity Market	Prioritize	Market Design Complete		0.09	0.00	0.00	0.09
28	Time Differentiated TCCs	TCC	Prioritize	Market Design Complete		0.25	0.00	0.15	0.40

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
29	Valuing Transmission Security	Capacity Market	Prioritize	Issue Discovery		0.24	0.00	0.30	0.54
30	Winter Reliability Capacity Enhancements	Capacity Market	Prioritize	Issue Discovery		0.19	0.00	0.30	0.49

Mandatory 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
31	Ambient Adjusted Transmission Lines Rating	Energy Market	Mandatory	Development Complete	Functional Requirements	0.36	0.00	1.00	1.36
32	CRIS Expiration Evaluation	Capacity Market	Mandatory	Development Complete	Functional Requirements	0.24	0.00	0.25	0.49
33	Demand Curve Reset	Capacity Market	Mandatory	Study Complete	Study Defined	0.41	0.00	1.50	1.91
34	FERC Order 2222 Compliance	New Resource	Mandatory	Functional Requirements	Market Design Concept Proposed	1.01	0.00	0.35	1.36
35	Integrating Champlain Hudson Power Express (CHPE)	New Resource	Mandatory	Study Complete		0.11	0.00	0.00	0.11
36	Interconnection Process Enhancements	Planning	Mandatory	Deployment	Market Design Complete	0.22	0.05	0.25	0.52
37	Modeling Improvements for Capacity Accreditation	Capacity Market	Mandatory	Deployment	Functional Requirements	0.35	0.00	0.10	0.45

Continuing 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
38	Balancing Intermittency	Energy Market	Continuing	Market Design Complete	Market Design Concept Proposed	0.30	0.00	0.77	1.07
39	Emissions Transparency – Requested by Stakeholders	Energy Market	Continuing	Deployment	Functional Requirements	0.20	0.00	0.00	0.20
40	Evolving Financial Transaction Capabilities - Bilateral Transactions	Energy Market	Continuing	Deployment	Software Design	0.34	0.00	0.00	0.34
41	Hybrid Aggregation Model	New Resource	Continuing	Deployment	Software Design	1.65	0.00	1.00	2.65

Future 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
42	Capacity Transfer Rights for Internal Transmission Upgrades	Capacity Market	Future						
43	Dynamic Reserves - Phase 2	Energy Market	Future						
44	Eliminate Fees for CTS Transactions with PJM	Energy Market	Future						
45	Locational Marginal Pricing of Capacity	Capacity Market	Future						
46	Long Island PAR Optimization and Financial Rights	Energy Market	Future						

Future 2024 Market Projects

Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
47	M2M West PARs	Energy Market	Future						
48	More Granular Operating Reserves	Energy Market	Future						
49	Reserves for Congestion Management	Energy Market	Future						
50	Review of Real-Time Market Structure	Energy Market	Future						
51	Separating Up and Down Regulation Service	Energy Market	Future						

NYISO Scores & High Priority Project Constraints

NYISO Scores

Item	Project	Product Area	Strategy	Operational or Market Issue	Cost & Complexity	Score (1-100)	Rank
			4	4	2		
7	Dynamic Reserves - Phase 1	Energy Market	9.0	8.0	2.0	72	1
15	LCR Optimizer Enhancements	Capacity Market	6.0	7.0	7.0	66	2
5	Co-located Steam and Storage – Requested by Elevate Renewable Energy	New Resource	6.0	5.0	9.0	62	3
6	Coordinated Grid Planning Process (CGPP) Continuation	Planning	6.0	6.0	7.0	62	3
20	Operating Reserves Performance	Energy Market	6.0	7.0	5.0	62	3
26	SubAccounts for Reporting - Requested by NRG	Business & Finance	7.0	7.0	3.0	62	3
29	Valuing Transmission Security	Capacity Market	7.0	7.0	3.0	62	3

NYISO Scores

Item	Project	Product Area	Strategy	Operational or Market Issue	Cost & Complexity	Score (1-100)	Rank
			4	4	2		
14	Internal Controllable Lines	New Resource	7.0	6.0	4.0	60	8
4	Clean Hydrogen - Requested by NextEra and Constellation	New Resource	6.0	6.0	5.0	58	9
13	Improve Duct-Firing Modeling	Energy Market	6.0	7.0	3.0	58	9
21	Participation Opportunities for Small DER	New Resource	6.0	6.0	5.0	58	9
30	Winter Reliability Capacity Enhancements	Capacity Market	6.0	7.0	3.0	58	9
2	Advanced Storage Modeling and Operation	New Resource	5.0	7.0	4.0	56	13
18	MDIWG Support	New Resource	6.0	3.0	10.0	56	13

NYISO Scores

Item	Project	Product Area	Strategy	Operational or Market Issue	Cost & Complexity	Score (1-100)	Rank
			4	4	2		
12	Granular Capacity Market Pricing	Capacity Market	7.0	6.0	1.0	54	15
8	Eliminate Offline GT Pricing	Energy Market	5.0	5.0	6.0	52	16
17	Market Purchase Hub Transactions - Requested by LIPA	Energy Market	6.0	4.0	6.0	52	16
1	5 Minute Transaction Scheduling	Energy Market	6.0	5.0	3.0	50	18
9	Engaging the Demand Side	New Resource	7.0	4.0	3.0	50	18
10	Evolving Resource Adequacy Model	Capacity Market	7.0	4.0	3.0	50	18
16	Long Island Reserve Constraint Pricing	Energy Market	5.0	5.0	5.0	50	18
27	Project Removed (Do Not Score)- Removal decided during 6/14 BPWG due to scope already being included in ICL Supply Side Mitigation for Controllable Lines	Capacity Market	5.0	3.0	9.0	50	18

NYISO Scores

Item	Project	Product Area	Strategy	Operational or Market Issue	Cost & Complexity	Score (1-100)	Rank
			4	4	2		
25	Storage as Transmission	New Resource	5.0	3.0	8.0	48	23
11	Expanding Peak Hour Definition - Requested by DPS	Capacity Market	5.0	2.0	9.0	46	24
28	Time Differentiated TCCs	TCC	5.0	4.0	4.0	44	25
19	Mitigation Threshold Review	Energy Market	3.0	3.0	9.0	42	26
3	Advancing NYISO Transparency - Requested by DC Energy	Energy Market	4.0	3.0	6.0	40	27
22	Pivotal Supplier Calculation Change	Capacity Market	3.0	3.0	7.0	38	28
24	Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	TCC	3.0	5.0	1.0	34	29
23	Reference Level Software Cleanup	Energy Market	3.0	4.0	2.0	32	30

High Priority Project Constraints

- **New Resource Team**

- Resource constraints start to show up after including Advanced Storage Modeling and Operation

- **Energy Market Team**

- Resource constraints start to show up after including Improve Duct-Firing Modeling

- **Capacity Market Team**

- Resource constraints start to show up after including Winter Reliability Capacity Enhancements

- **The NYISO is continuing to evaluate these resource constraints and looks forward to more insights from the Stakeholder Survey**

Next Steps

Next Steps

- **Deadline for completing scoring survey will be June 24th**
- **Contact Kevin Pytel or Member Relations for any survey related issues**
 - Send email to Kevin Pytel at kpytel@nyiso.com or call his cell at (518) 428-9528 for assistance
- **Stakeholder scoring and high priority project constraints results will be presented at the July 12th BPWG**

Our Mission & Vision



Mission

Ensure power system reliability
and competitive markets for New
York in a clean energy future



Vision

Working together with stakeholders
to build the cleanest, most reliable
electric system in the nation

Questions?

Appendix – Milestones and Project Prioritization Phases

Milestone Definitions

Milestone	Definition
Issue Discovery	NYISO has facilitated education session(s) for stakeholder knowledge development of problem/issue, conducted stakeholder solicitation of potential solutions to address problem/issue, and summarized findings at a working group meeting for potential ranking and future project identification.
Study Defined	The scope of work for the study has been presented to stakeholders, including a discussion on the necessary input(s), assumption(s) and objective(s) of the study.
Study Complete	Scope of work to be performed has been completed; results and recommendations have been presented to the appropriate Business Owners and stakeholders.
Market Design Concept Proposed	NYISO has initiated or furthered discussions with stakeholders that explore potential concepts to address opportunities for market efficiency or administration improvements.
Market Design Complete	NYISO has developed with stakeholders a market design such that the proposal can be presented for a vote at the BIC, OC, or MC to define further action on the proposal.
Functional Requirements	NYISO has completed documentation of the functional requirements and the Business Owner has approved.
Architectural Design	The architectural design document is complete and software development is ready to begin.
Projects with the following Milestones will generally be proposed as Continuing in future years, subject to Stakeholder input	
Software Design	The software design document is complete and software development is ready to begin.
Development Complete	Development has been completed, packaged and approved by the Supervisor.
Deployment	Required software changes to support commitment have been integrated into the production environment.

Project Prioritization Process

Phase	Description
Stakeholder Project Identification	Stakeholders may present project ideas at stakeholder meetings, sector meetings, get feedback and refine their proposal during this phase before the NYISO provides a comprehensive list of candidate projects for consideration.
Identification	The NYISO develops a Markets and Enterprise project candidate lists from regulatory obligations, strategic initiatives, State of the Market recommendations, infrastructure enhancements, product plans and stakeholder proposals. These are presented and further refined with stakeholder input during this phase.
Prioritization	This phase involves a stakeholder survey and the NYISO prioritization of projects. The stakeholder survey will facilitate an assessment of the relative priority of the topic within the portfolio and is used to determine stakeholder appeal. The NYISO prioritization incorporates the stakeholder appeal into objective criteria that reflects strategic alignment, expected outcomes, risks, and ability to execute in development of a priority score for each Market project.
Evaluation	This phase involves performing a feasibility assessment based on detailed cost and labor estimates, dependencies, priority scores, and stakeholder feedback.
Recommendation	This phase involves proposing a feasible set of project deliverables and related budget requirements. The proposal is refined as needed based on stakeholder feedback.

Project Type

Project Type	Description
Mandatory	Projects that are key to support Strategic Initiatives, FERC Orders, maintain reliable operations, or sustain the operation of the NYISO business. These projects will be included in the budget
Continuing	Approved in a prior year and have progressed to either Software Design, Development Complete, or Deployment. Additional projects may be classified as Continuing based on stakeholder feedback. These projects will be included in the budget
Future	Consensus from stakeholder discussions of this projects priority relative to other projects has resulted in these projects NOT being prioritized and initiated in the coming budget year. Resources, time constraints, stakeholder feedback, and other project dependencies have been taken into consideration
Prioritize	Projects to be prioritized and included in the budget based on a feasibility assessment taking into consideration resources, time constraints, stakeholder feedback, priority score, and other project dependencies. Market projects are included in the stakeholder survey

Project Category

Project Category	Description
Enterprise	Includes internal-facing technology and back office support projects that have no market rule changes. This list includes projects that may be noticeable to Market Participants. These projects are NOT included in the stakeholder survey
Market	Projects associated with market rule(s) including market design and study projects as well as any project implementing market rule changes. These projects are included in the stakeholder survey unless they are Mandatory, Continuing, or Future

Project Scoring

Project Scoring	Description
NYISO Only	Enterprise projects that are not Mandatory, Continuing, or Future types are scored by the NYISO Only during the Prioritization phase. These projects are included in the budget based on a feasibility assessment taking into consideration resources, time constraints, priority score and other project dependencies.
Stakeholder Scored	Market projects that are not Mandatory, Continuing, or Future are included in the stakeholder survey and scored by the NYISO during the Prioritization phase. These projects are included in the budget based on a feasibility assessment taking into consideration resources, time constraints, stakeholder feedback, priority score, and other project dependencies.